

## CLAIMS

10 1. A shale-stabilizing additive comprising a polymer based on  
5 an olefinically unsaturated hydrocarbon with alkylene oxide  
based side chains added to a wellbore drilling or service  
fluid to be injected into subterranean formations.

15 2. The additive of Claim 1 wherein the polymer is a copolymer  
10 of an olefinically unsaturated hydrocarbon and an  
ethylenically unsaturated carboxylic acid, carboxylic acid  
20 salt or carboxylic acid anhydride with alkylene oxide based  
side chains.

25 3. The additive of claim 1 or 2, wherein the polymer is a  
copolymer of styrene or a styrene derivative and maleic  
anhydride with alkylene oxide based side chains.

30 4. The additive of any one of claims 1 to 3, wherein the  
20 polymer has a molecular weight of from 5000 g/mol to  
100,000 g/mol.

35 5. The additive of any one of claims 1 to 4, wherein the  
25 weight of the alkylene oxide based side chains is above 200  
g/mol.

40 6. The additive of any one of claims 1 to 5, wherein the  
20 number of alkoxylates in the polymer side chain is up to  
60 units.

45 7. The additive of any one of claims 1 to 6, wherein the  
25 polymer has the molecular structure:

Sub A1  
cont.

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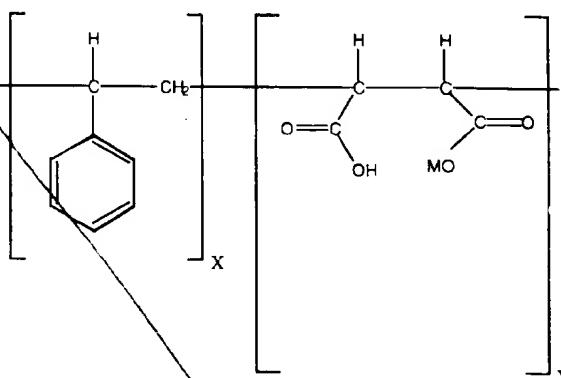
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wherein M in each occurrence independently is hydrogen or -  
[CH<sub>2</sub>-CHR-O-]<sub>n</sub>-CH<sub>3</sub> with R being CH<sub>3</sub> or CH<sub>2</sub>-CH<sub>3</sub> or hydrogen,  
with the proviso that at least some of the radicals M have  
the meaning of -[CH<sub>2</sub>-CHR-O-]<sub>n</sub>-CH<sub>3</sub>, n is from 3 to 70,  
preferably greater than 4 and less than 60, and X and Y  
each independently are from 1 to 100.

10 8. The additive of claim 3, wherein the residual maleic  
anhydride groups in the polymer are hydrolyzed.

9. Wellbore drilling or service fluid, said fluid comprising a  
polymer based on an olefinically unsaturated hydrocarbon  
with alkylene oxide based side chains to be brought into  
contact with subterranean, specifically clayey formations.

10. The wellbore fluid of claim 9, being water based.

20 11. Use of a polymer based on an olefinically unsaturated  
hydrocarbon with alkylene oxide based side chains for  
stabilizing shale or clayey formations.

(Total A3)